



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,997	02/11/2004	Richard J. Carey	51895	3357

21874 7590 06/07/2005
EDWARDS & ANGELL, LLP
P.O. BOX 55874
BOSTON, MA 02205

EXAMINER

BARRECA, NICOLE M

ART UNIT PAPER NUMBER

1756

DATE MAILED: 06/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/777,997

Applicant(s)

CAREY ET AL.

Examiner

Nicole M. Barreca

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8, 10-12 and 15-18 is/are rejected.
- 7) ☒ Claim(s) 4, 9, 13 and 14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/7/2004</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

1. Claims 1-18 are pending in this application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 6, 7 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Hioki (US 2002/0187421).
4. A method for preparing a photoresist composition by filtering a raw resist solution is disclosed. The photoresist comprises an alkali soluble resin and photosensitive agents [0029]. The photoresist may be a positive chemically amplified type [0062]-[0063]. The pore diameter of the filter is usually from about 0.01 to 1 μm [0072].
5. Claims 1, 2 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Trefonas (US 5,350,714).
6. Manufacturers are now filtering resist materials through filters having diameters of 0.04 μm (col.1, 66-68).
7. Claims 1, 2, 7, 11, 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Adams (US 6,410,209).

8. Antireflective compositions (ARC) are used with an overcoated photoresist. The ARC composition was filtered through a 0.1 μm or 0.2 μm filter (col.19, 44-46). The resist composition was filtered through a 0.1 μm or 0.2 μm filter (col.22, 59-col.23, 7).

9. Claims 11-12 and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Ding (US 5,994,430).

10. Antireflective coating composition is disclosed. The polymeric solution for the antireflective layer was filtered with a 0.2 μm nylon filter (col.14, 39-51).

11. Claims 1-3 and 7-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Feiring (US 6,790,587).

12. A photoresist composition comprising a polymer (resin) and a photoactive compound is disclosed. The polymer solution was filtered through a 0.2 μm nylon filter (col.3, 10-27; col.31, 41-45).

13. Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by Breyta (US 5,492,793) or as being anticipated by the applicant's admitted prior art.

14. Breyta discloses a chemically amplified photoresist composition comprising a photosensitive acid generator and a polymer (abstract). The applicant teaches that this is a known photoresist composition (p.10).

15. Claims 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Thackeray (US 5,851,730) or as being anticipated by the applicant's admitted prior art.

16. An antihalation or antireflective composition is disclosed (abstract). The applicant teaches that this is a known antireflective composition (p.2).

Art Unit: 1756

17. Please note that the claims 15-18 are written in product-by-process form and that the "photoresist comprising a photoactive component and a resin" or "organic antireflective coating composition" are the only recitations which impart structural limitations on the product. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process (*In re Thorpe*). Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product (*In re Marosi*). See MPEP 2113.

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hioki or Adams as applied to claims 1 or 7 above, and further in view of Chen (US 6,586,560).

Art Unit: 1756

20. Hioki and Adams disclose filtering the photoresist through a Teflon filter with a pore size less than 0.40 μm but do not disclose using a polypropylene filter. Chen teaches that a resist solution can be filtered through either a polypropylene or a Teflon filter to remove particulate matter (col.7, 29-38). It would have been obvious to one of ordinary skill in the art to use a polypropylene filter, instead of a Teflon filter, to prepare the photoresist in the method of Hioki or Adams because Chen teaches that a photoresist may be filtered through either a polypropylene or a Teflon filter to remove particulate matter.

Allowable Subject Matter

21. Claims 4, 9 and 13-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

22. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to teach or suggest a method for preparing a photoresist comprising filtering a photoresist composition with a polyamide or nylon filter having a mean pore size of about 0.03 microns or less. The prior art fails to teach or suggest a method for preparing an antireflective comprising filtering an organic antireflective composition with a nylon filter having a mean pore size of about 0.03 microns or less or 0.02 microns or less.

Conclusion

Art Unit: 1756

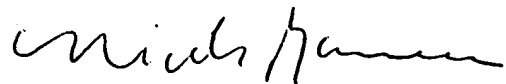
23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. WO 2004/069959, published 8/29/04, discloses a process for refining resin for resist.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicole M. Barreca whose telephone number is 571-272-1379. The examiner can normally be reached on Monday-Thursday (9AM-7PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nicole M Barreca
Examiner
Art Unit 1756



5/11/05